The Nematinae (Hymenoptera Tenthredinidae) of south-east Asia

By Robert B. Benson
(British Museum (Natural History), London)

This is intended as a summary of what little is known about the Nematinae (Tenthredinidae) of S.E. Asia, to include the material collected by Dr. René Malaise at Kambaiti in N.E. Burma in 1934 and kindly lent to me for study. This material belongs to the Stockholm Museum.

The rich flora of *Salix* in the high Himalayas must surely indicate a correspondingly rich fauna of Nematinae including *Pontania* there, still unexplored. The Himalayan botanist, Mr. F. Ludlow, for example, tells me that he is familiar with the appearance of such galls on the leaves of *Salix* in the Himalayas; but as a botanist, he naturally avoided leaves disfigured by galls in his gatherings, and we could find none from the Himalayas in the herbarium of the British Museum (Natural History) and they have never been recorded so far as I am aware.

I have deliberately not described two single specimens of *Pristiphora* as belonging to rather nondescript new species, as it would seem that to do so would add little to knowledge and might hinder later workers.

Where, however, the study of a species increases our knowledge of a genus I have not hesitated to describe new species even though based on single specimens, so long as they can easily be distinguished from those already known and are neither badly damaged nor obviously abnormal.

Cladiini

Cladius pectinicornis (Geoffroy)

Tenthredo pectinicornis Geoffroy
Cladius orientalis Cameron 1902: 448, (Simla) *Syn. n.*
Cladius pectinicornis (Geoffroy); Benson 1958: 140.

A widespread temperate Palaearctic species, from Europe and Asia Minor across Siberia to Japan and south to Himalaya.

Priophorus nigricans (Cameron)

Cladius nigricans Cameron 1902: 448 (Simla).
Priophorus hisakus Okutani, 1959: 35—6, figs. 2 a—d *Syn. n.*

N.E. BURMA, Kambaiti, 7000 ft., 4 ♂ 1♀, 17.V.1934 (*R. Malaise*).

Distribution so far as is known restricted to Himalayan region and Japan.

This species is black except only for the obscurely pale tibiae and basitarsi; it has very long antennae in the male (about as long as thorax and abdomen together) but with no basal projection beneath the 3rd segment, and in female with a straight 3rd segment. The claws have a very long inner tooth. The sawsheath, saw, and penis-valve are shown in Okutani (1959).

The species is closely related to *P. pallipes* Lepeletier and *P. inermis* Zhel., to which it would run in Zhelochovtsev's key (1952). Apart from the genitalia it differs from *P. pallipes* in its short tibial spurs, the inner hind spur being only 1/3 as long as basitarsus and about as long as the apical width of tibia (in *P. pallipes* it is almost 1/2 basitarsus and 1 1/2 as long as apical width of tibia); and from *P. inermis* it differs in having the head densely pubescent above. (*P. inermis* has a glabrous head above but the length of its tibial spurs is unknown to me). Okutani reared the species from *Duchesnea indica*, Focke.

Priophorus brullei Dahlbom

Priophorus brullei Dahlbom; Benson 1958: 142.

N.E. BURMA, Kambaiti, 7000 ft., 1 ♂, 1 ♀, 9.V.1934 (*R. Malaise*).

This species is holarctic in the boreal and subalpine temperate regions. It is attached to *Rubus, Sorbus* and probably other Rosaceae.

Hoplocampini

Hemichroa major Rohwer

Hemichroa major Rohwer 1915: 53.

INDIA, Darjeeling.

Hemichroa orientalis Rohwer

Hemichroa orientalis Rohwer 1921: 108—9.

INDIA, Kumaon 6000 ft.

Platycampus luridiventris (Fallén)

CHINA, Szechuan, Chengtu, 1 ♂. 6.IV.1940 (*Mrs. K. J. Richardson*).

This species has previously been recorded only from Europe but I have recently examined a specimen from Japan (Dr. Ichiji Togashi). The specimen from Szechuan differs from normal European specimens in having the whole of abdomen obscurely brown, and the sides of the mesonotal lobes as well as a large fleck on the mesopleura fulvous.

Hoplocampa formosana Malaise

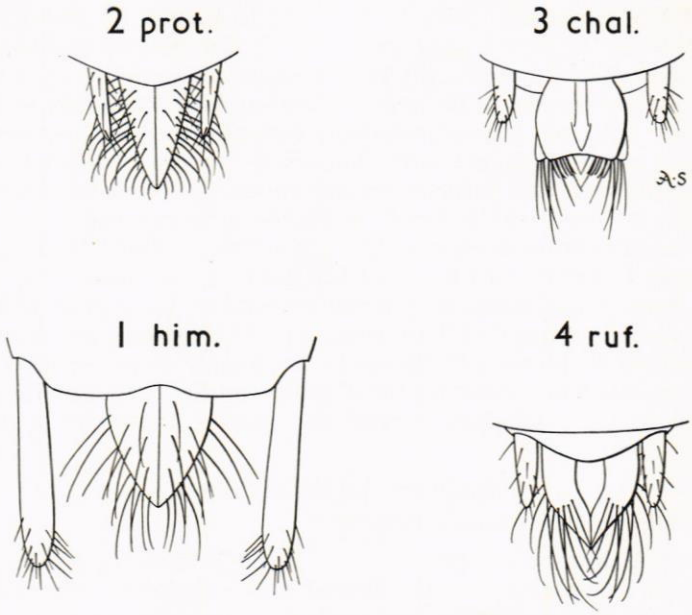
Hoplocampa formosana Malaise 1961: 238.

FORMOSA, Daibu.

Hoplocampa sinobirmana Malaise

Hoplocampa sinobirmana Malaise 1961: 237.

N.E. BURMA.



Figs 1—4. Sawsheath from above in: 1, *Megadineura himalayana*; 2, *Nematus proteus*; 3, *Pristiphora chalybeata*; & 4, *P. rufocincta*.

Mesoneura rufonota (Rohwer) comb.n.

Moricella rufonota Rohwer 1916: 111.

Formosa; China, Foochoo, 2 ♀, V.1936 (*M. S. Yang*).

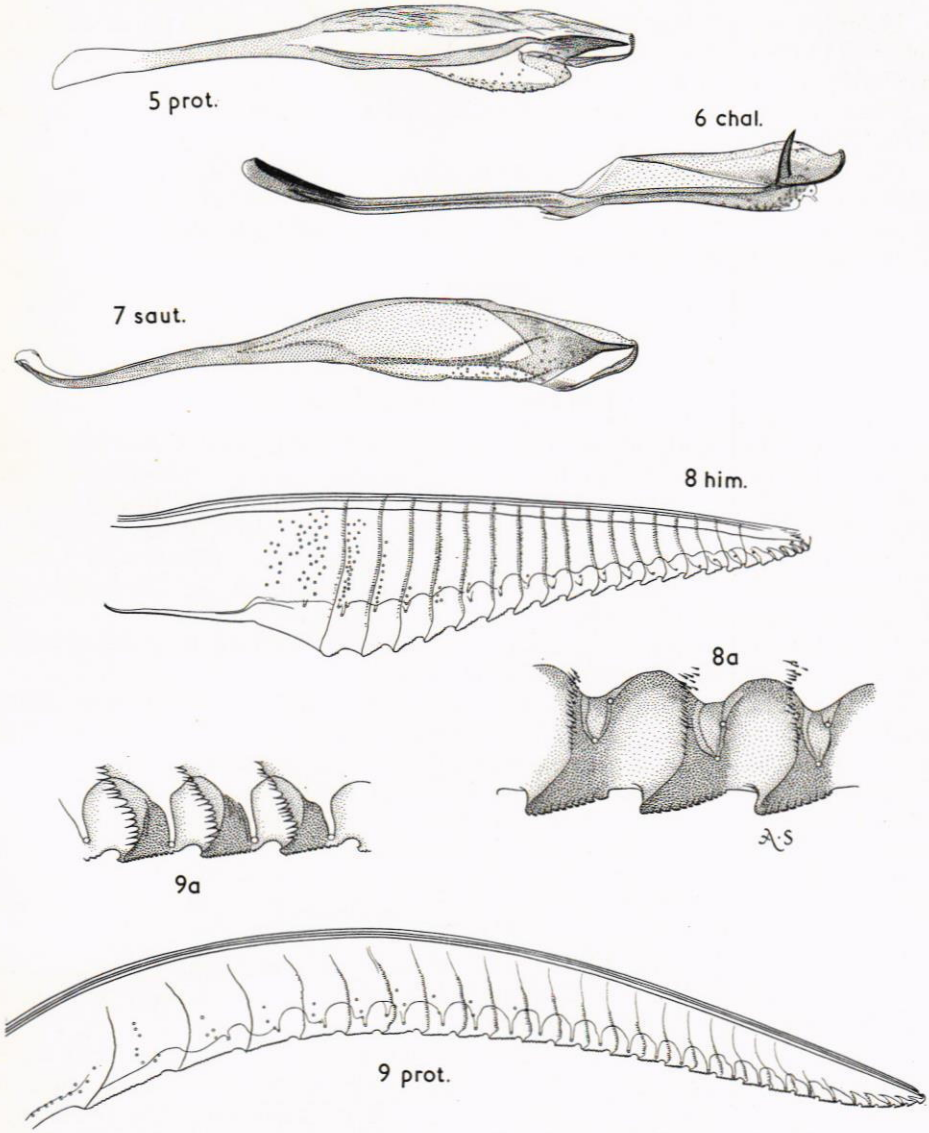
The differences between *Mesoneura* and *Moricella* are so slight that it seems unreasonable to keep them apart. In the first place the general facies of the two genera is the same; and *Moricella* would run to *Mesoneura* in my recent key to British Nematine genera except only that the tapering antenna of *Moricella* is slightly longer than twice the breadth of the head 2.4 : 1.0 (instead of 1.9 : 1.0) and that C of the forewing is not quite so strongly dilated apically, cell C at the point of origin of RS+M from R being only nearly as wide as vein C at this point.

I therefore treat *Moricella* Rohwer as a synonym of *Mesoneura* Hartig, *syn.n.*

Megadineura himalayana sp.n.

Colour: ♀ black with the following parts yellowish-white: clypeus, front legs (except coxae) obscurely, middle and hind apices of coxae, trochanters, and basal third of middle and hind tibiae; and abdomen with middle segments obscurely brown. Wings hyaline; stigma (except for pale lower apical half) and venation black. *Length* 10 mm.

Head: (Antennae with flagella missing.) Clypeus with broad wedge-shaped excision to about 1/2 depth. Eyes converge slightly in front where they are nevertheless further apart than the height of one (1.1 : 1.0). Malar space about 1/3 diameter of front ocellus. Frontal crest reaches across from eye



Figs 5—7. Penisvalve in: 5, *Nematus proteus*; 6, *Pristiphora chalybeata*; & 7, *P. rufocincta*.
Figs 8—9. Saws of: 8, *Megadineura himalayana*; 9, *Nematus proteus*.
Figs 8 a—9 a. Enlarged middle teeth from saws of figs 8 and 9.

to eye cutting off the medial and two antennal grooves from the pentagonal frontal basin. Hind ocelli about as far apart as from hind margin of head but closer than from eye margin (1.0 : 1.1). Temples not contracted behind the eyes in dorsal view.

Legs: with inner hind tibial spur about as long as apical breadth of tibia. Hind basitarsus longer than three following tarsal segments together (1.0 : 0.9). Tarsal claws cleft.

Abdomen: Ovipositor about as long as middle tibia; sawsheath contracting behind in dorsal view, not reaching back as far as apices of the subclaviform cerci (fig. 1). Saw fig. 8 & 8 a.

KASHMIR, 6,000—7,000 ft., 1 ♀, (*C. G. Nurse,* B.M. 1913—139) (B.M. type. Hym. No. 1.787).

This species differs from the generotype *M. grandis* (E. André) of East Siberia thus: (1) in having a malar space present; (2) in being much smaller, 10 mm. instead of 13—15 mm; (3) in lacking the yellowish-white lateral flecks on the third and fourth tergites.

Nematini

Pristiphora rufocincta sp.n.

♀ *Colour*: Head and thorax black with the following parts yellowish-white: labrum, tegula, legs (except for front coxa and base of middle and hind coxae, base of front femur, lower side of middle femur and apical half of hind femur, as well as extreme apex of front and middle tibiae, apical half of hind tibia and apical tarsal segments which are suffused with black); abdomen reddish yellow (except for the black middle of the 7th tergite and the apical segments beyond).

Wings hyaline; stigma and venation piceous except that they are white at the extreme base of the wings. Length 5 mm.

Head: Strongly contracted behind the eyes. Clypeus subtruncate. Malar space about as long as distance between antennal sockets. Frons with tubercles obsolete, but with a slightly concave pentagonal area clearly defined by a raised continuous surrounding wall, from which a branch crosses the inner orbits each side to form a crest above the deep antennal grooves. Hind ocelli further apart than from hind margin of head as 1.0 : 0.7; POL : OOL as 1.0 : 0.8. Antenna (two apical segments missing) estimated as about as long as C+stigma of forewing; 3rd segment shorter than greatest measure of eye (1.0 : 1.1).

Thorax: Normal, very shining with obsolete surface sculpture; legs (hind tarsi missing) with inner hind spurs longer than apical breadth of tibia as 1.0 : 0.6. Claws with short inner tooth.

Wings normal with Sc more than its own length from origin of M on R.

Abdomen with very faint coriaceous sculpture above. Ovipositor about as long as middle tibia. Sawsheath in dorsal view extends further back than cerci and at its base is about as broad as the apex of the hind femur, but it has a medial acute flange (fig. 4). Saw figs 10 & 10 a.

Pubescence silvery and general; there are no conspicuous glabrous areas. N.E. BURMA, Kambaiti, 7,000 ft., 1 ♀ (holotype), 26.III.1934 (*R. Malaise*) (Stockholm Museum).

This species is coloured as in the holarctic *P. quercus* Hartig even to the black-tipped hind femora, but the head sculpture is entirely different with well defined frontal area and smooth surface and likewise is the apically acute sawsheath. (In *P. quercus* the head is densely covered with tubercles and the sawsheath is truncate apically cf. Benson 1958, p. 162). It would appear to be closely related to the following species: *P. formosana* Rohwer,

which however differs in having the frontal area entirely obsolete and the hind ocelli scarcely more than their own diameter distant from the hind margin of the head, femora without black markings and the wings infuscate.

Pristiphora formosana Rohwer

Pristiphora formosana Rohwer, 1916: 112.

Only known from Formosa. See the preceding species for a comparison between the two.

Pristiphora sauteri Rohwer

Pristiphora sauteri Rohwer 1916: 112.

The original description, based on a single ♀ from Formosa, agrees, so far as it goes, with the specimens before me from Burma [Kambaiti, 7000 ft. 1 ♂, 3 ♀ 7.IV—5.VI.1934 (*R. Malaise*)], so that I have little doubt that both lots of specimens belong to the same species. Some notes on the male and a comparison of the species with *P. pallidiventris* Fallén are however subtended.

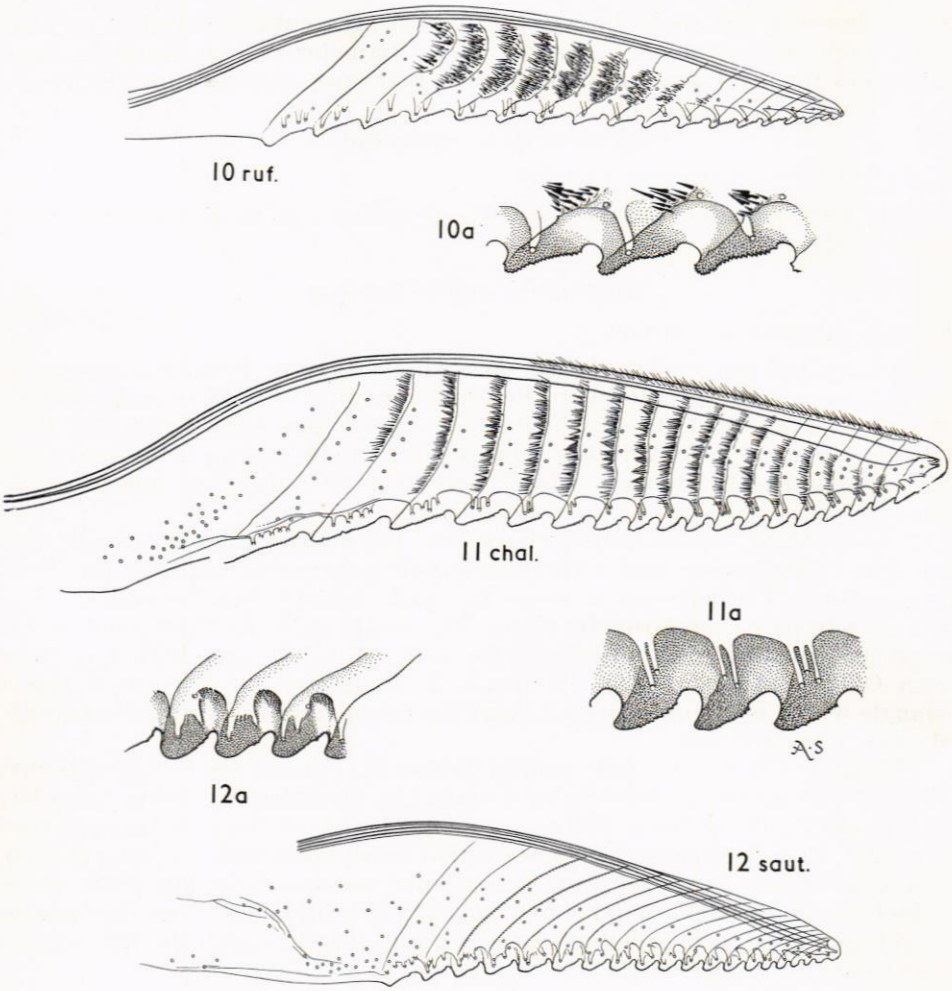
♂ as ♀ except for the sexual characters, the abdomen likewise with pale margins to the tergites and with entirely pale underside except for the black hypopygium. The antenna however is ± pale beneath basally and the legs are entirely pale except for the claws. The ocelli are more than twice as far apart as from the hind margin of the head (1.0 : 0.4) and POL is greater than OOL as 1.0 : 0.8. The last tergite is transected by the raised apical triangle which is carinate medially and the hypopygium is narrowly truncate at apex. Length 5 mm.

This species is superficially similar to the W. Palaearctic *P. pallidiventris* (Fallén) but differs in having bifid claws, in the tubercles being ± obsolete in the middle of the frons, in the segmental bands of the saw being curved (fig. 12). (*P. pallidiventris* has claws with a small inner tooth, a frons densely tuberculate and a saw with straight segmental bands c.f. Benson 1958). In its ± metallic black background colouring and the bifid tarsal claws this species would appear to form a distinct species group together with the two species that follow.

Pristiphora chalybeata sp.n.

♀ *Colour* black with a slightly bluish metallic sheen and the following parts yellowish white: mouthparts, trochanters, apex of front femur, and front tibiae, basal 1/3 of middle tibia, basal 5th of hind tibia, tarsus (except apical segment) of front and middle legs and outer side of hind tarsus, 3rd abdominal segment (except for medial dorsal patch) and underside of 4th segment. Wings hyaline, with stigma and venation black. Length 7.5 mm. *Head* smooth and shining above with neither clearly defined frontal area nor tubercles. Malar space about as long as distance between antennal sockets. Clypeus truncate in front. Hind ocelli further apart than from back of head as 1.0 : 0.7. POL : OOL as 1.0 : 0.9. Antenna about as long as C+1 1/2 stigma of forewing; 3rd segment longer than greatest measure of eye as 1.0 : 0.9.

Thorax except for hair follicles and scattered punctures on post-tergite of mesoscutellum smooth and shining. Suture between front lobes of mesonotum obsolescent behind. Hind legs with tarsus as long as femur+2nd



Figs 10—12. Saws of *Pristiphora spp.*: 10, *rufocincta*; 11, *chalybeata*; & 12, *sauteri*.
Figs 10 a—12 a. Enlarged middle teeth from saws of figs 10—12.

trochanter, basitarsus = 3 following tarsal segments together, inner spur about 1/2 basitarsus. Claws sub-bifid, the inner tooth about as long as the end tooth. Wings normal.

Abdomen shining, with surface sculpture obsolete; sawsheath truncate in dorsal view and about as wide as base of hind tibia (fig. 3); Saw (figs. 11 & 11 a).

Pubescence on head, thorax and underside of abdomen long and pale except for a glabrous wedge on the posterior part of the sterno-pleural line. ♂ as ♀ apart from sexual characters, and that the tibiae and tarsi of the front and middle legs are brownish and of the hind legs piceous, and the abdomen entirely metallic black; the malar space is linear (about as long as 2 compound eye facets); hind ocelli about as far apart as from back of

head; POL : OOL as 1.0 : 1.5; antenna with 3rd segment about as long as greatest measure of eye; mesosternum subglabrous; inner hind tibial spur about as long as apex od tibia; apical tergite transected by defined triangle with a raised medial carina; penis valve fig. 6.

N.E. BURMA, Kambaiti, 7000 ft., 1 ♀ (holotype) 23.IV., and 1 ♂, 15.IV.1934 (*R. Malaise*). [Holotype in Stockholm Museum, paratype in British Museum.]

This species is clearly recognizable by the combination of the whitegirdled abdomen of the ♀ with the metallic black background and the sub-bifid claws. I know of no other *Pristiphora* with this character combination.

P. albobalteata Takeuchi 1933 (Japan) would appear to be closely related, having likewise a white-girdled abdomen and sub-bifid claws, but it has also a heavily punctate head, white on the labrum and clypeus, no metallic sheen in the basic black colour and the ocelli further apart than from the nearest eye-margin.

Pristiphora borneensis Forsius.

Pristiphora borneensis Forsius 1933: 177—8.

Only known from the holotype from Borneo.

This specimen is in very poor condition. It is a ♀ of a metallic black species with bifid claws. The hind ocelli are further apart than from the hind margin of the head as 1.0 : 0.7; POL=OOL; malar space linear, about 0.1 : 1.0 of distance between antennal sockets. Sterno-pleural line sub-glabrous. Distinguished from the other known oriental *Pristiphora* by its linear malar space.

Pristiphora spp.

A single ♂ and single ♀ of other rather nondescript *Pristiphora* species from N.E. BURMA, Kambaiti 1934 (*R. Malaise*), mainly black in colour with toothed claws, are left unnamed.

Croesus orientalis Rohwer

Croesus orientalis Rohwer 1921: 109.

In addition to the type from INDIA, Shillong, 5000 ft., 1 ♀, (*J. B. Fletcher*) there are, in the British Museum 2 ♂ and 3 ♀ labelled ASSAM, B.M. 1906: 185 (W. F. Badgley).

The following key is designed to distinguish this species from the other 8 known species in the genus.

Croesus

Key to species or species-complexes

1 Mesopleura above rough without clearly defined punctures 2

— Mesopleura above with clearly defined separate punctures or shining and ± impunctate 4

2 (1) Lower mesopleura without glabrous impunctate longitudinal sterno-pleural line 3

— Lower mesopleura with longitudinal glabrous impunctate sterno-pleural line. Includes *C. japonica* Takeuchi (=*nigromaculatus* Malaise) redgirdled species from E. Asia on *Betula* and *Alnus*; and the entirely black-bodied *C. castaneae* (Rohwer) from E. North America on *Castanea*. ..... *japonicus* complex.

3(2) Hind ocelli further from back of head than from each other (1.2—1.3 : 1.0). Clypeus excised to more than 1/2 its total length. Very variable in sculpture and structure of head, thorax and appendages (malar space for example compared with inter-antennal line varies from 1.0 : 0.9 to 1.7). Abdomen red-girdled to entirely black. Polyphagous on Dicotyledonous trees and shrubs. W. Palaearctic. *septentrionalis* (L.)

— Hind ocelli not further from back of head than from each other. (0.9—1.0 : 1.0). Clypeus deeply or shallowly excised. Malar space less than interantennal line (1.0 : 1.2—2.0). Abdomen red-girdled or ± entirely black. On *Betula*.
Includes *C. latipes* Villaret, W. Europe, red-girdled species, *C. nigrodorsatus* (Malaise) from E. Asia, black-bodied species and *C. latitarsis* Norton, black-bodied species from E. North America. ..... *latipes* complex.

4(1) Temples, mesonotum and mesopleura clearly punctate. Red-girdled species, black parts without metallic reflections. Mainly obligatorily parthenogenetic with very rare males 5

— Temples, mesonotum and mesopleura ± impunctate. Black-bodied species with blue and purplish metallic reflections. Normally sexual species. Assam. *orientalis* Rohwer.

5(4) Wings with transverse infuscate hand. Mesopleura above with fine surface sculpture between punctures. *Carpinus* and *Corylus*. Europe. *brischkei* Zaddach

— Wings hyaline without transverse infuscate band. Mesopleura above shining between the punctures. *Alnus*. Holarctic. ..... *varus* Villaret.

Euura mucronata (Hartig)

Euura mucronata (Hartig); Benson 1958: 195, figs. 593, 595—7.

N.E. BURMA, Kambaiti, 7000 ft., 1 ♀, 4.IV.1934 (*R. Malaise*).

A very common boreal holarctic species not previously recorded from S.E. Asia.

Nematus proteus sp.n.

♀ *Colour* black with the following parts yellow: labrum, mouthparts, clypeus, inter-antennal area, gena, hind orbits, hind corner of pronotum, tegula, legs (except basal 1/2 of coxae) and basal portion of sawsheath (2nd valvifer). Wings hyaline; stigma and venation piceous. *Length* 4.5—5 mm.

Head normal, sub-parallel sided. Malar space shorter than distance between antennal sockets as 1.0 : 1.3. Frontal area as a raised platform with the front raised and entire.

Hind ocelli further apart than from hind margin of head (1.0 : 0.6), but POL less than OOL (1.0 : 1.2). Antenna about as long as C of forewing; 3rd segment shorter than 4th as 1.0 : 1.2; 4th equal to greatest measure of eye.

Thorax normal with slightly convexly rounded mesoscutellum. Legs with short spurs — inner spur on hind tibia about as long as apical breadth of tibia; hind tarsus little shorter than tibia with basitarsus equal to three following tarsal segments together; claws bifid with parallel teeth.

Wings normal, with Sc 2 of forewing very close to origin of M from R. Cross-vein 2 rm sometimes missing so that cells IRS and 2 RS are fused. Cross-vein Cu-a received near middle of cell 1 M. Anal cell of forewing with basal loop ± developed though only partly pigmented (stub of vein A 2

leaves jugal fold apically and turns towards A 1). In hindwing middle cell RS is considerably reduced in size and is shorter than cell M.

Abdomen normal with ovipositor as long as hind femur and sawsheath tapering behind (fig. 2). Saw as in figs 9 & 9 a.

Surface sculpture very sparse: head above and mesonotum ± coriaceous and dull, though middle of scutellum is shining and impunctate; abdomen with usual transverse alutaceous sculpture above.

Pubescence normally distributed all over, lacking the glabrous sternopleural line.

♂ as ♀ except for the sexual characters and that the hypopygium is yellow. The apical tergite is produced normally and the penis valve is shown in fig. 5. Length 4,5 mm.

N.E. BURMA, Kambaiti, 7,000 ft., 9 ♀ 23.III to 21.IV.1934 (holotype 18.IV.1934), 1 ♂, 17.V.1934 (*R. Malaise*). [Holotype, 5 ♀ and 1 ♂ paratypes in Stockholm Museum, 3 ♀ in British Museum.]

This species is in many ways like a *Pontania* and distinguished from all other mainly black *Nematus* with piceous stigma by its comparatively long ovipositor (as long as a hind femur) suggesting a habit of ovipositing deep in tissues. It lacks however the hollows round the antenna of typical *Pontania*. The tendency to abnormal wing venation, not only in the development of the basal loop of the anal cell in the forewing, but also in the spasmodic absence of 2rm and the reduction in the size of cell RS in the hindwing, throws considerable doubt on the insect's exact relationship and therefore its likely ecological preference.

Nematus oligospilus Förster

Nematus oligospilus Förster; Benson 1958: 225, and fig. 726.
N. mendicus Walsh; Benson 1962.

In the British Museum there are specimens of this species from W. PAKISTAN: Quetta, 1 ♂, 7 ♀, VIII.1903 (*C. G. Nurse*). This species is already known to be holarctic in the north temperate region (Benson 1962) but the Quetta series considerably extends its known southern extension.

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